

A1 SIZE (594 mm x 841 mm) | Last saved by: dcv447 | Layout: 21 Bill of Reinforcing Steel (Sheet 1 of 3) | File: P:\2017\17M-00806-00 - Truro Creek Culvert Replacements\17M-00806-00 Truro Creek Culvert Replacements\MM Drawings\17M-00806-00 Truro Creek Culvert Replacements DD Winchester 21 Bill of materials.dwg

**BILL OF REINFORCING STEEL
FOR BOX CULVERT (SUBSTRUCTURE)**

MARK	TYPE	PIN DIAMETER	LENGTH	No.	MASS	BENDING DIAGRAM
C1001	BENT	65	4 200	58	191.23	
C1002	BENT	65	1 030	175	141.50	
C1501	BENT	95	8 025	32	403.18	
C1502	BENT	95	12 345	32	620.21	
C1503	STR		7 660	68	817.78	
C1504	STR		11 980	68	1 278.98	
C1505	BENT	95	1 500	26	61.23	
C1506	BENT	95	1 880	186	549.00	
C1507	BENT	95	1 840	186	537.32	
C1508	STR		4 440	50	348.54	
C1509-1	STR		820	2	2.57	
C1509-2	STR		880	2	2.76	
C1509-3	STR		965	2	3.03	
C1509-4	STR		1 055	2	3.31	
C1509-5	STR		1 145	2	3.60	
C1509-6	STR		1 230	2	3.86	
C1509-7	STR		1 320	2	4.14	
C1509-8	STR		1 405	2	4.41	
C1509-9	STR		1 495	2	4.69	
C1509-10	STR		1 585	2	4.98	
C1509-11	STR		1 670	2	5.24	
C1509-12	STR		1 760	2	5.53	
C1509-13	STR		1 845	2	5.79	
C1509-14	STR		1 935	2	6.08	
C1509-15	STR		2 025	2	6.36	
C1509-16	STR		2 110	2	6.63	
C1509-17	STR		2 200	2	6.91	
C1509-18	STR		2 285	2	7.17	
C1509-19	STR		2 375	2	7.46	
C1509-20	STR		2 465	2	7.74	
C1510	BENT	95	5 550	4	34.85	

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**BILL OF REINFORCING STEEL
FOR BOX CULVERT (SUBSTRUCTURE)**

MARK	TYPE	PIN DIAMETER	LENGTH	No.	MASS	BENDING DIAGRAM
C1511	BENT	95	2 655	59	245.93	
C1512	BENT	95	2 060	59	190.82	
C1513	BENT	95	5 880	2	18.46	
C1514	BENT	95	5 530	2	17.36	
C1515	STR		4 565	10	71.67	
C1516-1	STR		1 655	2	5.20	
C1516-2	STR		1 790	2	5.62	
C1516-3	STR		1 925	2	6.04	
C1516-4	STR		2 060	2	6.47	
C1516-5	STR		2 195	2	6.89	
C1516-6	STR		2 335	2	7.33	
C1516-7	STR		2 470	2	7.76	
C1516-8	STR		2 605	2	8.18	
C1516-9	STR		2 740	2	8.60	
C1516-10	STR		2 875	2	9.03	
C1516-11	STR		3 010	2	9.45	
C1516-12	STR		3 150	2	9.89	
C1516-13	STR		3 285	2	10.31	
C1516-14	STR		3 420	2	10.74	
C1516-15	STR		3 555	2	11.16	
C1516-16	STR		3 690	2	11.59	
C1516-17	STR		3 825	2	12.01	
C1516-18	STR		3 965	2	12.45	
C1516-19	STR		4 100	2	12.87	
C1516-20	STR		4 235	2	13.30	
C1516-21	STR		4 370	2	13.72	
C1516-22	STR		4 505	2	14.15	
C1516-23	STR		4 565	2	14.33	
C1517	STR		2 500	28	109.90	
C1518	BENT	95	2 425	88	335.04	
C1519	BENT	95	4 525	48	341.00	

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**BILL OF REINFORCING STEEL
FOR BOX CULVERT (SUBSTRUCTURE)**

MARK	TYPE	PIN DIAMETER	LENGTH	No.	MASS	BENDING DIAGRAM
C1520-1	BENT	95	905	2	2.84	
C1520-2	BENT	95	965	2	3.03	
C1520-3	BENT	95	1 050	2	3.30	
C1520-4	BENT	95	1 140	2	3.58	
C1520-5	BENT	95	1 230	2	3.86	
C1520-6	BENT	95	1 315	2	4.13	
C1520-7	BENT	95	1 405	2	4.41	
C1520-8	BENT	95	1 490	2	4.68	
C1520-9	BENT	95	1 580	2	4.96	
C1520-10	BENT	95	1 670	2	5.24	
C1520-11	BENT	95	1 755	2	5.51	
C1520-12	BENT	95	1 845	2	5.79	

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METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

**LOCATIONS APPROVED
UNDERGROUND STRUCTURES**

SIGNED BY: _____ DATE: _____
SUPV U/G STRUCTURES

LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING

G.B.M. = TOP NUT OF FIRST HYDRANT SOUTH OF INTERSECTION BETWEEN NESS AVENUE AND LINWOOD STREET
ELEV. = 233.659

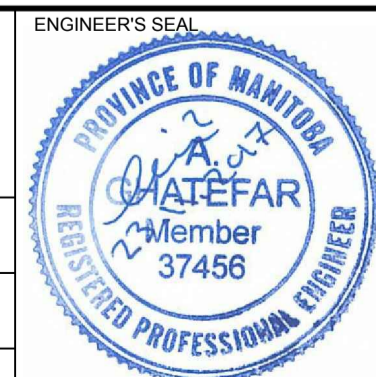
0	ISSUED FOR TENDER	17.11.23	JL
No.	REVISIONS	DATE	BY



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APPROVED BY: JL

HOR. SCALE: N.T.S.
VERTICAL: N.T.S.
RELEASED FOR CONSTRUCTION



CONSULTANT PROJECT No. 17M-00806-00

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

TRURO CREEK CULVERT REPLACEMENT
AT WINCHESTER STREET

BILL OF REINFORCING STEEL
(SHEET 1 OF 3)

CITY DRAWING NUMBER: C322-17-21
BID OPPORTUNITY NUMBER: 1014-2017
SHEET OF: 21 OF 25
REV 0



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